



**ATRC**  
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**RESEARCH  
NOTES:**

**Project 497**

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## **STATEWIDE ROADWAY INCIDENT MANAGEMENT PLAN**

Managing roadway incidents is a growing challenge in Arizona due to the significant increase in volumes of traffic on the state's highway system. Several highly publicized incidents have occurred that resulted in hours-long highway closures, and led to media scrutiny of the methods used by response agencies. This research project was undertaken to enable Arizona to identify the best methods available for managing roadway incidents, and to make specific recommendations for improvements.

### **Background**

In August of 1998, Governor Jane Hull directed state agencies to initiate a series of steps to reduce the impact of roadway incidents. This mandate was the result of a closure for a multiple-vehicle fatality investigation that closed Interstate 17 for several hours. The backup affected traffic as much as 60 miles away, and took more than six hours to clear.

Other recent incident closures had been well publicized by the media, and key agencies had received many inquiries as well as public complaints. The Arizona Departments of Transportation (ADOT) and Public Safety (DPS) immediately began to coordinate their work on several of the Governor's initiatives, to reduce the impacts of incidents on Arizona's roadways.

One of those initiatives was the development of a Statewide Incident Management Plan. The plan would include a series of recommendations for improvement of all aspects of handling these incidents, especially major incidents that required road closures. It would call for statewide input by public and private stakeholders to provide the roadmap for further improvements.

### **Approach**

The first project research task was to evaluate incident management (IM) plans and programs in other states and summarize the most effective examples in a report to the Technical Advisory Committee (TAC).

A search for other relevant statewide IM programs was conducted with limited success; programs in ten states were considered. Washington State had done a Service Patrol study, which had several other incident management elements included in it. California had a 10-year-old report of incident management recommendations that was developed specifically to support new legislation, rather than for use in the field.

Illinois and Maryland did not have formal IM plans, but both had established operational guidelines. Each state had a

successful history of Incident Management operations, which they had documented over a period of time through agency policies.

The IM programs chosen for more detailed study were Illinois, with the oldest, largest and most comprehensive regional incident management program in the nation; Washington State, with one of the only statewide formal incident management response programs; and Maryland, with an aggressive response program operated out of a joint statewide traffic operations center. The lessons learned were presented to the project TAC, with benefit-cost estimates ranging from 8-to-1 up to 17-to-1 in Illinois.

The next related project activity was to review and summarize the existing measures underway in Arizona to improve aspects of incident management. The most significant recent steps taken by Arizona agencies are:

- ADOT sponsored statewide and corridor ITS (Intelligent Transportation Systems) studies to recommend the most effective systems and programs.
- ADOT developed a statewide ITS program, including rural Variable Message Sign (VMS) installations.
- ADOT developed Traffic Operations Center (TOC) operational guidelines for Incident Management activities.
- ADOT implemented the Highway Condition Reporting System (HCRS) for 24-hour information on closures or restrictions of all major roadways.
- DPS deployed new Total Station units and Photogrammetry technology for measuring and recording evidence.
- DPS used aircraft for better response, and for aerial photography of incidents.
- Incident management training for multiple rural response agencies was coordinated by ADOT in several areas.
- An agreement was developed by ADOT with the state towing association to spell out traffic control procedures for crashes and subsequent cleanup.
- An innovative “levels of service” agreement was signed by ADOT and DPS, setting performance standards for incident management, investigation and response.
- A Statewide Alternate Route Plan was recently completed by ADOT.
- A statewide Emergency Operations Plan is in place for major emergencies, and outlines the duties of all key agencies.
- ADOT has been providing Incident Command and Hazardous Materials training sessions for responders.
- An ADOT research study was done to improve the ability to notify, locate and respond to incidents on remote sections of the US 93 / NAFTA corridor.

## Focus Group Workshops

The next task, to conduct regional IM focus group meetings, was an important step in determining the existing practices across the state, as well as region-specific needs of state and local response agencies. Stakeholders representing each key response discipline in the Incident Management process throughout Arizona were invited to participate in a series of local meetings.

A mailing list of over 600 agencies, companies and individuals was developed. All police, sheriffs, fire chiefs, departments of public works, and towing companies were invited, as well as involved regional and Federal agencies, highway user groups, and trucking associations.

Initially, focus group meetings were conducted in eight Arizona cities. A review of successful programs and practices was presented, and then input was requested from the attendees. Each workshop was begun with a clean slate so those previous meetings did not influence the input. More than 250 persons attended these meetings held in Phoenix, Yuma, Kingman, Safford, Tucson, Prescott, Holbrook, and Flagstaff.

Overall, 59 specific IM needs and concerns were developed in the Focus Groups, and several key issues were mentioned in every meeting:

- Interagency communications
- IM equipment funding
- Update towing regulations
- Responder safety
- Patient care and transport
- Prevention of secondary crashes
- Interagency training

At the completion of this outreach activity, a draft report and recommendations were completed and mailed out. Then, a second series of eight meetings was held to discuss the draft report's findings. These stakeholder meetings were held in the same cities, except in Sedona rather than Prescott.

Well over 100 stakeholders attended the follow-up sessions, and others submitted their comments by phone, fax, or e-mail. Attendees were asked to rank each of the recommendations as either "low" or "high" priority, and to state in their judgment if it:

- a. required changes to state laws or to legislated agency-level budgets
- b. is a multi-agency, partnership issue
- c. is a single agency, internal policy issue

## Recommendations

The research project TAC was then given the stakeholders' 62 recommendations and priorities for review, categorization and consolidation. The final TAC review process produced 18 areas of IM recommendations, listed in order of priority:

1. Implement a program for prevention of secondary collisions as a multi-agency goal. Improve response time & traveler notification; seek "quick clearance" law.
2. Develop and conduct multi-agency incident management training including light use, positioning of vehicles, traffic control, sign use, post-incident reviews.

3. Develop a statewide communications and Computer-Aided Dispatch (CAD) system for DPS.
4. Improve the investigative process for felony and fatal investigations to reduce the duration and scope of road closures.
5. Evaluate agency response training and equipment to improve responder safety.
6. Provide funding to upgrade ADOT equipment and procedures for improved response to after-hours emergencies.
7. Refine liability law in Arizona related to roadway emergencies, based on history and current best practices in other states.
8. Upgrade regulations, training, and inter-agency agreements with the towing industry. Implement tire chain laws. Review payment basis and call rotation policies for heavy towing and recovery.
9. Form regional Incident Management Teams to maintain interagency involvement and to resolve incident management local issues.
10. Provide information to partner response agencies about ADOT's statewide alternate route plans. Develop alternate route maps for critical route segments.
11. Require formal incident management plans for all construction zones that affect traffic on existing roadways, with early involvement by response agencies.
12. Take steps to improve the timeliness and accuracy of motorist information related to roadway incidents.
13. Set consistent policies and procedures for removal of bio-waste from crash locations, and improve the fatal victim organ donor procedure for rural areas.
14. Develop regional and statewide staffing plans for each response agency, taking into account the steady increases in traffic volumes and incident rates.
15. Develop a practical clean-up policy for diesel spills on roadways, and review policies for the shipment of hazardous materials during inclement weather.
16. Expand the cost recovery process to include the time and materials used to manage traffic during incidents, and return the funds to those agencies on a local-unit basis.

17. Develop interagency agreements for consistent management of roadway incidents with each tribal government.
18. Develop and implement a Phoenix freeway service patrol (FSP) program by the year 2001. (A separate urban FSP study was tasked, and recommendations were developed as a final project phase).

## **Project Implementation**

Implementation in Arizona of this plan's recommendations will establish the state as a national leader in delivering comprehensive incident management services. It will reduce secondary crashes, injuries and fatalities. It will improve emergency response performance, while reducing delays associated with incidents.

In all, 59 specific recommendations were developed by this project, in 18 categories. Of these, there are 14 that can be acted on individually by DPS and/or ADOT. There are 34 others that are multi-agency efforts, and 11 that require law or agency budget changes by the state legislature.

While issues requiring legislation may require a year or more for action, most individual agency or multi-agency issues can be acted upon in four to eight months. Therefore, action could be taken at the present time on at least 48 of the 59 recommendations if they are accepted and championed by agency leadership.

## **Project Lessons**

The project Focus Group meetings brought together all of the agencies and private businesses involved in dealing with roadway incidents. The process allowed participants to learn from each other, and to gain a better understanding of the concerns and priorities of each response group on the scene. Responders who have trained with others are far more likely to value the others' priorities.

Long term associations already exist between many of the responders, especially in rural areas. This project also brought together some agencies for the first time, and they should continue this association to resolve future concerns about incidents.

## **Project Benefits**

In the focus group process of gathering information and developing recommendations, the participants identified steps that they could take on an individual or joint agency basis. There already are significant improvements in response and traffic management in several areas of the state. Incidents are being handled faster and more effectively after these sessions.

This plan provides information that is useful to all responders. It includes material that will be valuable in individual or multi-agency training for all employees.

## **Conclusions**

This project provided insight into the difficulties faced by all response agencies. Responding to and handling all types of incidents anywhere in the state, 24 hours per day, is a major challenge. The dangers involved, and the history of injuries or death to responders, are driving factors in the decision to close or restrict traffic during roadway incident response.

There is uniform support for the incident management recommendations in this report among the wide variety of stakeholders who contributed to the process, and action should be taken in the near term.

*Note:* The full report on this project, the Arizona Statewide Incident Management Plan, by John B. O'Laughlin of PB Farradyne Inc. (Arizona Department of Transportation, report FHWA-AZ00-497, published July 2000) may be obtained from the ATRC as listed below

***For Additional Information Contact:***

**ATRC/2739 East Washington Street, #075R / Phoenix, AZ 85034 / (602) 712-3130**